

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-14. (Canceled).

15. (Currently Amended) A method for manufacturing a composite component, comprising:

producing a porous ceramic blank;

one of infiltrating and filling the blank with a metal melt, wherein: the metal melt includes an alloy of copper and at least one additional metal; and

converting the additional metal via a reaction with at least one reactive component of the blank in such a way that a pore space of a ceramic phase is filled with essentially pure copper,

wherein the blank, infiltrated with the metal melt, is subjected to controlled post-heating to facilitate infiltration.

16. (Previously Presented) The method as recited in Claim 15, wherein the composite component includes a brake disk.

17. (Previously Presented) The method as recited in Claim 15, further comprising:

infiltrating the metal melt at a temperature that is lower than a melting point of copper.

18. (Previously Presented) The method as recited in Claim 17, wherein: the temperature is between approximately 680°C and 1,000°C.

Claim 19. (Canceled).

20. (Previously Presented) The method as recited in Claim 15, wherein the blank has a porosity of approximately 50% by volume.

21. (Previously Presented) The method as recited in Claim 15, wherein: the at least one additional metal has a lower specific weight than copper, and the at least one additional metal includes one of a CuMg alloy, a CuAl alloy, a CuSi alloy, a CuZr alloy, and a CuTi alloy.

22. (Previously Presented) The method as recited in Claim 15, wherein the at least one reactive component of the blank includes at least one oxide of at least one of at least one carbide and at least one nitride.

23. (Previously Presented) The method as recited in Claim 22, wherein the at least one oxide includes at least one of TiO_2 , Al_2O_3 , and ZrO_2 .

24. (Previously Presented) The method as recited in Claim 15, wherein the blank includes constituents which are inert vis-à-vis the metal melt and are made of one of particles and fibers formed by one of an oxide, a carbide, a nitride, and a boride.

25. (Previously Presented) The method as recited in Claim 24, wherein the inert components of the blank are used as at least one of reinforcement elements and functional elements of the finished composite component.

26. (Currently Amended) A metal-ceramic component, comprising:
a ceramic phase provided with a pore space filled with essentially pure copper, wherein the ceramic phase includes a conversion product that has a lower specific weight than copper, the conversion product including a reactive ceramic portion and a metal of a copper alloy,

wherein conversion occurs during a controlled post-heating to facilitate infiltration.

27. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the metal-ceramic component corresponds to a brake disk.

28. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein: the copper alloy is one of a CuAl alloy, a CuMg alloy, a CuSi alloy, a CuZr alloy, and a CuTi alloy, and

the conversion product is formed by aluminum oxide and titanium aluminide, MgAl_2O_4 or MgTiO_3 , a silicide such as TiSi_2 or Ti_5Si_3 , by zirconium dioxide ZrO_2 , or titanium dioxide TiO_2 .

29. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the component has a copper content between 20% by volume and 45% by volume, and a ceramic content between 55% by volume and 80% by volume.

30. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the component has a copper content between 25% by volume and 40% by volume, and a ceramic content between 60% by volume and 75% by volume.

31. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the ceramic phase includes at least one of particles and fibers made of at least one of at least one oxide, at least one carbide, at least one nitride, and at least one boride.

32. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the component has a fracture toughness greater than $10 \text{ MPa}\cdot\text{m}^{1/2}$.

33. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the component has a fracture toughness greater than $15 \text{ MPa}\cdot\text{m}^{1/2}$.

34. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the component has a thermal conductivity of more than 50 W/mK .

35. (Previously Presented) The metal-ceramic component as recited in Claim 26, wherein the component has a thermal conductivity of more than 70 W/mK .

36. (New) The metal-ceramic component as recited in Claim 15, wherein the post-heating is controlled so that a partial reaction occurs in the surface area of the at least one reactive component.

37. (New) A method for manufacturing a composite component, comprising:
producing a porous ceramic blank;
one of infiltrating and filling the blank with a metal melt, wherein the metal melt includes an alloy of copper and at least one additional metal; and
converting the additional metal via a reaction with at least one reactive component of the blank in such a way that a pore space of a ceramic phase is filled with essentially pure copper,
wherein the metal melt is infiltrated at a temperature that is lower than a melting point of copper.

38. (New) The method as recited in Claim 37, wherein the blank, infiltrated with the metal melt, is subjected to controlled post-heating to facilitate infiltration.

39. (New) A metal-ceramic component, comprising:
a ceramic phase provided with a pore space filled with essentially pure copper, wherein the ceramic phase includes a conversion product that has a lower specific weight than copper, the conversion product including a reactive ceramic portion and a metal of a copper alloy,
wherein the copper alloy is one of a CuAl alloy, a CuMg alloy, a CuSi alloy, a CuZr alloy, and a CuTi alloy, and the conversion product is formed by aluminum oxide and titanium aluminide, $MgAl_2O_4$ or $MgTiO_3$, a silicide such as $TiSi_2$ or Ti_5Si_3 , by zirconium dioxide ZrO_2 , or titanium dioxide TiO_2 .

40. (New) The metal-ceramic component as recited in Claim 39, wherein conversion occurs during a controlled post-heating to facilitate infiltration.